Amendments to the Claims:

Please amend claims 2, 3, and 12 as follows:

1. (Original) A method of deriving spatial and/or temporal distributions of action potentials across a heart, comprising:

determining a T-wave alternan waveform by (a) differencing a plurality of temporally adjacent T-wave segments to obtain preliminary alternan waveforms, (b) compensating for disturbances and/or ectopic beats in the preliminary alternan waveforms, and (c) computing a final alternan waveform; and

decomposing the final alternan waveform to provide information relating to changes in cardiac action potentials of the subject.

2. (Currently Amended) The method of claim 1 wherein ~~specific phases of~~ the cardiac action potential comprises specific phases of depolarization, refractory and repolarization phases.

3. (Currently Amended) A method of deriving spatial and/or temporal distributions of action potentials across a heart, comprising:

determining a T-wave alternan waveform by (a) differencing a plurality of temporally adjacent T-wave segments to obtain preliminary alternan waveforms, (b) compensating for disturbances and/or ectopic beats in the preliminary alternan waveforms, and (c) computing a final alternan waveform; and

decomposing the final alternan waveform to provide information relating to changes in cardiac action potentials of the subject, ~~The method of claim 1~~ wherein decomposing the final alternan waveform comprises fitting the final alternan waveform with a summation of a plurality of alternan model curves, with individual alternan model curves being associated with a specific phase of the cardiac action potential and scaled in amplitude such

that a difference between the final alternan waveform and the summation is reduced.

4. (Original) The method of claim 3 wherein specific phases of the cardiac action potential comprise depolarization, refractory and repolarization phases.

5. (Original) The method of claim 4 wherein further comprising constructing the alternan model curves by determining the difference between augmented and diminished states of the associated alternating action potential phase.

6. (Original) The method of claim 1 wherein amplitudes of scaling factors are used in the assessment of cardiac instability.

7. (Original) The method of claim 1 wherein the preliminary alternan waveforms associated with a selected time period are used to assess the risk of cardiac instability.

8. (Original) The method of claim 7 wherein the risk estimate includes a first measure proportional to the simultaneous alternan voltage difference between preliminary alternan waveforms associated with distinct physiologic signals and a second measure inversely proportional to the spatial separation of the regions of the subject's heart monitored by the same distinct physiologic signals.

9. (Original) The method of claim 8 wherein the spatial separation of the regions of the subject's heart monitored by the distinct physiologic signals is estimated from the locations of a plurality of monitoring electrodes placed on the subject.

10. (Original) A system for deriving spatial and/or temporal distributions of action potentials across a heart, comprising:

a data source configured to obtain and/or retain data of a physiologic signal having substantially repetitive waveforms of a heart beat; and

a computer operatively coupled to the data source, the computer having a computer operable medium containing instructions for (1) determining a T-wave alternan waveform by (a) differencing a plurality of temporally adjacent T-wave segments to obtain preliminary alternan waveforms, (b) compensating for disturbances and/or ectopic beats in the preliminary alternan waveforms, and (c) computing a final alternan waveform, and (2) decomposing the final alternan waveform to provide information relating to changes in cardiac action potentials of the subject.

11. (Original) The system of claim 10 wherein the instructions for decomposing the final alternan waveform are related to specific phases of the cardiac action potential comprise depolarization, refractory and repolarization phases.

12. (Currently Amended) A system for deriving spatial and/or temporal distributions of action potentials across a heart, comprising:

a data source configured to obtain and/or retain data of a physiologic signal having substantially repetitive waveforms of a heart beat; and

a computer operatively coupled to the data source, the computer having a computer operable medium containing instructions for (1) determining a T-wave alternan waveform by (a) differencing a plurality of temporally adjacent T-wave segments to obtain preliminary alternan waveforms, (b) compensating for disturbances and/or ectopic beats in the preliminary alternan waveforms, and (c) computing a final alternan waveform, and (2) decomposing the final alternan waveform to provide information relating to changes in cardiac action potentials of the subject, ~~The system of claim 10~~ wherein the instructions for decomposing the final alternan waveform comprise fitting the final alternan waveform with a summation of a plurality of alternan model curves, with individual alternan model curves being associated with a specific phase of the cardiac action potential and scaled in amplitude such that a difference between the final alternan waveform and the summation is reduced.

13. (Original) The system of claim 12 wherein the instructions for decomposing the final alternan waveform are related to specific phases of the cardiac action potential comprise depolarization, refractory and repolarization phases.

14. (Original) The system of claim 13 wherein the computer operable medium further comprises instructions for constructing the alternan model curves by determining the difference between augmented and diminished states of the associated alternating action potential phase.

15. (Original) The system of claim 14 wherein amplitudes of scaling factors are used in the assessment of cardiac instability.

16. (Original) The system of claim 10 wherein the preliminary alternan waveforms associated with a selected time period are used to assess the risk of cardiac instability.

17. (Original) The system of claim 16 wherein the risk estimate includes a first measure proportional to the simultaneous alternan voltage difference between preliminary alternan waveforms associated with distinct physiologic signals and a second measure inversely proportional to the spatial separation of the regions of the subject's heart monitored by the same distinct physiologic signals.

18. (Original) The system of claim 17 wherein the spatial separation of the regions of the subject's heart monitored by the distinct physiologic signals is estimated from the locations of a plurality of monitoring electrodes placed on the subject.